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(54) **Method of manufacturing a reclosable package**

Verfahren zur Herstellung einer wiederverschließbaren Verpackung

Procédé de fabrication d'un paquet refermable

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Description

The prior art

[0001] The invention relates to a method of manufacturing a reclosable package from a preferably web-shaped package material of plastics, such as a polyethylene, polystyrene or polypropylene film which has a carrier layer of plastics or paper film applied thereto, and having a closure flap extending across an opening in the package, said closure flap or opening of the package being able to adhere to the package material again and thereby to reclose the package, as well as a method of operating the package.

[0002] Packages for in particular food products, stimulants, etc. are to be kept isolated from the atmosphere, which requires an effective gas-tight protection in the form of a barrier layer.

[0003] An example of food products which are to be stored air-tight, is cheese, including shaved cheese, sliced cheese and block cheese - but also products such as tea, coffee, chips, sweets and the like.

[0004] It is known to manufacture packages with an "incorporated" barrier layer, but this will normally be broken when the package has been opened.

[0005] Therefore, it is desirable to have a package which is sealed and is provided with an opening which may be closed by means of a flap or label, which, following opening, may be adhered to the package itself again and thus reclose this more or less air-tight.

[0006] An example of such a reclosable package is known from US 2004/0011677 A1. This package is provided with an adhered label coated internally with an adhesive, allowing it to be adhered to the package again after having been opened. In use, however, it will be difficult to avoid the situation that fingers touch the adhesive on the internal side of the label, which will inevitably impair the adhesiveness, as this will be destroyed even by very slight application of e.g. fat, dust, etc.

[0007] In addition to impairing the adhesiveness by touch, there is the risk that the packaged substance contained in the package will settle on the reclosing adhesive, when this substance is emptied out of the package across the internal side of the label.

The object of the invention

[0008] It is the object of the invention to remedy these many drawbacks, and this is achieved according to the invention by a method, wherein a groove is first stamped in the package material corresponding to the opening, said package material being a laminate which, on the inner side, consists of a weldable film, a reclosing adhesive layer, optionally a layer provided with print, and with a barrier film with a primer/welding lacquer on the outer side, following which a piece of film is welded across the groove on the material to provide the flap, said flap being a laminate which, on the outer side, consists of a film,

optionally with a layer provided with print, a reclosing adhesive layer and a film to which a hot melt/PSA reclosing adhesive layer has been applied, and finally with a primer/welding lacquer or weldable film on the inner side, following which, in a generally known manner, the web of material is shaped, is provided with its contents and is closed by means of welds to form the finished package.

[0009] Hereby, the package may be manufactured by means of conventional package machines and materials and with the best possible guarantee against leakages in the finished package.

[0010] Therefore, this package may be used as a package for food products, stimulants, etc., which are to be protected against atmospheric impacts.

[0011] When, as stated in claim 2, the package is operated by tearing the flap, the location of the reclosing adhesive will be rearranged, as, in the original welding/application, it is transferred from the flap and to the area around this on the package itself. The reclosing adhesive will then remain on the package and will not be so exposed to touch when the flap is opened and closed, just as the substance packaged in the package will not get in direct contact with the reclosing adhesive when being emptied.

[0012] Moreover, the barrier layer will remain broken, but intact, since it will remain permanently adhering to the flap and follow it during opening and closing and thus constitute a closed barrier layer.

[0013] Finally, it is expedient, as stated in claim 3, to secure the flap to the package along its one side edge, which is thus the bending line, as this may hereby be established when the package is welded together after filling.

The drawing

[0014] An exemplary embodiment of a package manufactured according to the invention will be described more fully below with reference to the drawing, in which

fig. 1 shows a perspective view of a finished package with an open flap in order to illustrate the structure prior to opening,

fig. 2 shows the finished package in a closed state,

fig. 3 shows a package after it has been opened,

fig. 4 shows a section through the laminate seen in the direction IV-IV in fig. 1,

fig. 5 shows a section through the finished package seen in the direction V-V in fig. 2, and

fig. 6 shows a section through the opened package seen in the direction VI-VI in fig. 3.

Description of an exemplary embodiment

[0015] The drawing shows an example of a flexible package bag 1 as it may look like and be used for the packaging of food products and the like, which do not tolerate exposure to atmospheric impacts.

[0016] An example of a food product of this type is shaven cheese and other products which either do not tolerate oxidation or are to be protected against penetrating odours, thereby ensuring that the taste or aroma of the contents is not impaired by these.

[0017] The package is made of a film material, as indicated in the sectional views of figs. 4-6, which show how an opening and closure flap 4 is mounted on the package bag 3 itself.

[0018] As shown in figs. 1-3, the closure flap 4 is mounted across an opening 6 in the bag, which may be closed again, as shown in fig. 3, so that the contents of the package may be emptied via the opening 6.

[0019] In order to ensure an effective reclosing adhesiveness, even after many opening and closing operations, the reclosing adhesive is mounted in a special manner, viz. on the flap 4, before this is applied to the package bag, as will be explained later.

[0020] The flap 4 itself is a piece of sheet material, which is shown in a vertical position in the sectional view in fig. 4.

[0021] The material is a laminate consisting of an outer film layer 4, which may be of PA, OPA, PET, M-PET or OPP or the like.

[0022] Further, a colour layer (not shown) may be incorporated, optionally with print, and/or additional layers of PA, OPA, PET, M-PET, Al or OPP, PE or PP.

[0023] Moreover, a reclosure 7 is applied to the underside, such as a hot melt/PSA adhesive, and, finally, a primer/welding lacquer or weldable film 12 is applied.

[0024] The package material for the manufacturing of the bag is likewise a film laminate 3, which comprises an internal welding film as well as optionally a print layer which is adhered thereto.

[0025] Outermost, a film is provided, with or without print, and finally a primer/welding lacquer 13 thereon.

[0026] The manufacture of the package will be described now.

[0027] A sheet web of the package material 3 is advanced on a roller path, following which a groove 9 is stamped on the web in a position determined by the later package opening 6 and with a shape, such as e.g. U-shaped, as indicated in fig. 1.

[0028] Then, a piece of material 4 is applied, having the shape of the finished closure flap 4.

[0029] This piece of material is welded or adhered to the bag material 3 and covers the stamped groove 9, as indicated in fig. 2.

[0030] The sheet web with the adhered flap is bent at the bottom, following which the lateral welds 5 may be provided, and the finished package may be filled with its contents.

[0031] The web sheet with the adhered flap may optionally be welded at the bottom 10, which thus has soft sides and a fin/lap seal on the rear side of the bag, following which the package may be filled with its contents.

[0032] Finally, the package is closed at the top by a top weld 8 which seals the package.

[0033] The package is then ready, and it will be airtight because of its unbroken barrier layer, which extends around the contents of the bag.

[0034] The sectional view in fig. 5 shows how the flap intimately engages the web of material 3, which seen from the outside is shown in fig. 2.

[0035] When the package is then opened, this takes place by a pull of the flap 4 to lift it from the bag, as indicated in fig. 3.

[0036] This pull, lift will cause the piece of material 11 of the bag to be lifted together with the flap 4, since it will adhere to the inner side of the flap 4, and this piece of material 11 will be released from the stamped groove 9.

[0037] This piece of material 11 will remain adhered to the flap 4 when this is operated.

[0038] At the same time, the adhesive layer 7 with the primer 12 will be transferred from the flap to the area around the created bag opening 6 and remain adhered thereto, as indicated in fig. 3.

[0039] The piece of material 11 is simply that part of the material 3 which is within the surrounding stamped groove 9, and which is intended to become the opening 6, and the hatching therefore only shows the adhesive layer 7 and the welding layer 12 which are transferred from the flap 4, and which remain to the area around the opening 6.

[0040] Since the welding layer 12 cannot be separated from the welding layer 13, the weakest layer in the connection around the stamped groove 9 is the adhesive layer 7, which is then separate from the flap 4 and adheres to the material 3.

[0041] However, the weakest layer in the connection within the stamped groove 9 is the material 3 which therefore follows the movements of the flap 4 due to the stamped groove 9.

[0042] The reclosing adhesive 7 will thus be protected when the package is open, and it will not be exposed to touch by the fingers when the flap is gripped in order to operate it.

[0043] Moreover, the packaged material will be able to leave the bag via the flap as a kind of pouring spout and will not be adhered to the reclosing adhesive.

[0044] A bag is used in the example shown to illustrate the invention, but, of course, it will be possible to apply the invention to other forms of packages, optionally of a more rigid material, where an effective reclosing effect is needed by means of an adhesive layer and a flap.

Claims

1. A method of manufacturing reclosable package from

preferably web-shaped package material of plastics, such as a polyethylene, polystyrene or polypropylene film which has a barrier layer of plastics or paper film applied thereto, and having a closure flap (4) extending across an opening to be formed in the package, said closure flap being able to adhere to the package material again and thereby to reclose the package, **characterized in that** a groove (9) is first stamped in the package material (3) corresponding to the opening (6), said package material (3) being a laminate which, on the inner side, consists of a weldable film, a reclosing adhesive layer, optionally a layer provided with print, and with a barrier film with a primer/welding lacquer (13) on the outer side, following which a piece of film is welded across the groove (9) on the material (3) to provide the flap (4), said flap being a laminate which, on the outer side, consists of a film, optionally with a layer provided with print, an adhesive layer and a film to which a hot melt/PSA reclosing adhesive layer (7) has been applied, and finally with a primer/welding lacquer or weldable film (12) on the inner side, following which, in a generally known manner, the web of material (3, 4) is shaped, is filled with its contents and is closed by means of welds (5, 8) or by fin/lap seals to produce the finished package, whereby the welding and adhesive forces are so as to allow that the flap (4) is pulled clear of the material (3) of the package along the stamped groove (9), whereby the reclosing adhesive layer (7) and the welding layer (12) at the edges of the flap (4) is remaining adhered to the welding layer (13) on the package material (3), whereas the piece of material (11), produced by the stamping, remains adheres, with the laminate, to the flap (4) to provide the opening (6) in the package.

2. A method according to claim 1, **characterized in that** the flap (4) is secured (8) along its one side edge to the package material (3).

Patentansprüche

1. Verfahren zur Herstellung einer wiederverschließbaren Verpackung aus einem vorzugsweise bahnförmigen Verpackungsmaterial aus Kunststoff, wie etwa einer Polyethylen-, Polystyren- oder Polypropylenfolie, die eine auf diese aufgebrachte Barrierschicht aus einer Kunststoff- oder Papierfolie hat, enthaltend eine Verschlussklappe (4), die sich über eine Öffnung erstreckt, die in der Verpackung auszubilden ist, wobei die Verschlussklappe in der Lage ist, erneut an dem Verpackungsmaterial zu haften und **dadurch** die Verpackung wiederzuschließen, **dadurch gekennzeichnet, dass** eine Rille (9) zuerst in das Paketmaterial (3) entsprechend der Öffnung (6) gestanzt wird, wobei das Verpackungsmaterial (3) ein Laminat ist, das auf der

Innenseite aus einer schweißbaren Folie, einer wiederverschließbaren Haftschrift (7), und wahlweise einer Schicht mit einem Aufdruck besteht, und mit einer Barrierefolie mit einem Grundier-/Schweißlack (13) auf der Außenseite versehen ist, worauf ein Stück einer Folie über die Rille (9) auf dem Material (3) geschweißt wird, um die Klappe (4) zu erzeugen, wobei die Klappe ein Laminat ist, das auf der Außenseite aus einer Folie, wahlweise mit einer Schicht, die mit einem Aufdruck versehen ist, einer Haftschrift und einer Folie besteht, auf die eine Heißschmelz-/PSA- Wiederverschließhaftschrift (7) aufgebracht wurde, und schließlich mit einem Grundier-/Schweißlack oder einer schweißbaren Folie (12) auf der Innenseite versehen ist, worauf in einer allgemein bekannten Art und Weise die Bahn des Materials (3, 4) geformt wird, mit seinen Inhaltsstoffen versehen wird und mit Hilfe von Verschweißungen (5, 6) oder Flügel-/Überlappungsnahten geschlossen wird, um die fertige Verpackung zu erzeugen, wobei die Schmelz- und Haftkräfte derart beschaffen sind, dass die Klappe (4) von dem Material (3) der Verpackung entlang der gestanzten Rille abgezogen werden kann, wobei die wiederverschließbare Haftschrift (7) und die Schweißschicht (12) an den Rändern der Klappe (4) an der Schweißschicht (13) auf dem Verpackungsmaterial (3) haften bleiben, wohingegen das Stück des Materials (11), das durch das Stanzen erzeugt wird, mit dem Laminat an der Klappe (4) haften bleibt, um die Öffnung (6) in der Verpackung bereitzustellen.

2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** die Klappe (4) entlang ihres einen Seitenrandes (8) am Verpackungsmaterial (3) befestigt wird.

Revendications

1. Procédé de fabrication d'un paquet refermable constitué de préférence par un matériau en bande de plastique pour emballage, tel qu'un film de polyéthylène, de polystyrène ou de polypropylène qui présente une couche barrière constituée d'un film de plastique ou de papier appliquée sur celui-ci, et ayant un volet de fermeture (4) s'étendant sur la largeur d'une ouverture à former sur le paquet, ledit volet de fermeture pouvant adhérer au matériau du paquet et de cette façon refermer le paquet, **caractérisé en ce qu'une rainure (9) est d'abord estampée sur le matériau du paquet (3) en correspondance avec l'ouverture (6), ledit matériau du paquet étant un laminé qui, sur la face intérieure, est composé d'un film soudable à chaud, d'une couche d'adhésif de fermeture (7), facultativement d'une couche munie d'une impression, et avec un film barrière avec une laque de collage/soudage (13) sur l'autre face, à la**

suite de quoi une pièce de film est collée à chaud sur la longueur de la rainure (9) pratiquée sur le matériau (3) de façon à former le volet (4), ledit volet étant un laminé qui, sur la face extérieure, comprend un film, optionnellement avec une couche comportant une impression, une couche adhésive et un film sur lequel a été appliquée une couche adhésive de fermeture (7) de hot melt PSA, et pour terminer avec une laque de collage/soudage ou un film soudable à chaud (12) sur la face intérieure, à la suite de quoi, de façon bien connue, la bande de matériau (3, 4) est mise en forme, chargée avec son contenu et fermée au moyen de soudures (5, 8) ou au moyen de fermetures par languettes de façon à produire le paquet terminé, ce par quoi les forces de collage et d'adhésion permettent que le volet (4) soit retiré proprement du matériau du paquet le long de la rainure estampée (9), la couche adhésive de fermeture (7) et la couche de soudage (12) sur les bords du volet (4) continuant à adhérer à la couche de soudage (13) du matériau du paquet (3), tandis que la pièce de matériau (11), obtenue par l'estampage, reste collée, avec le laminé, au volet (4) de façon à réaliser l'ouverture (6) dans le paquet.

2. Procédé selon la revendication 1, **caractérisé en ce que** le volet (4) est fixé (8) le long d'un de ses bords latéraux au matériau du paquet (3).

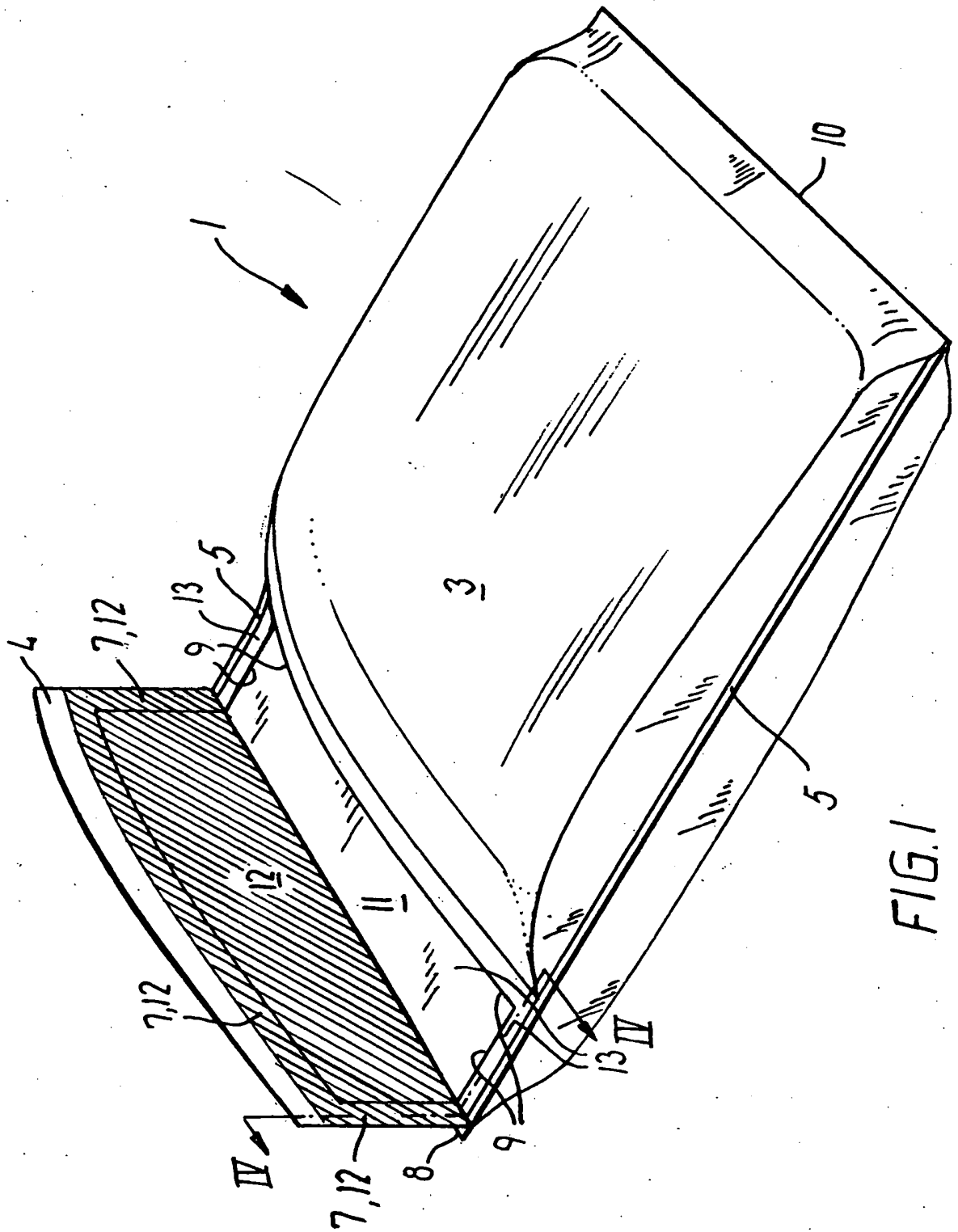
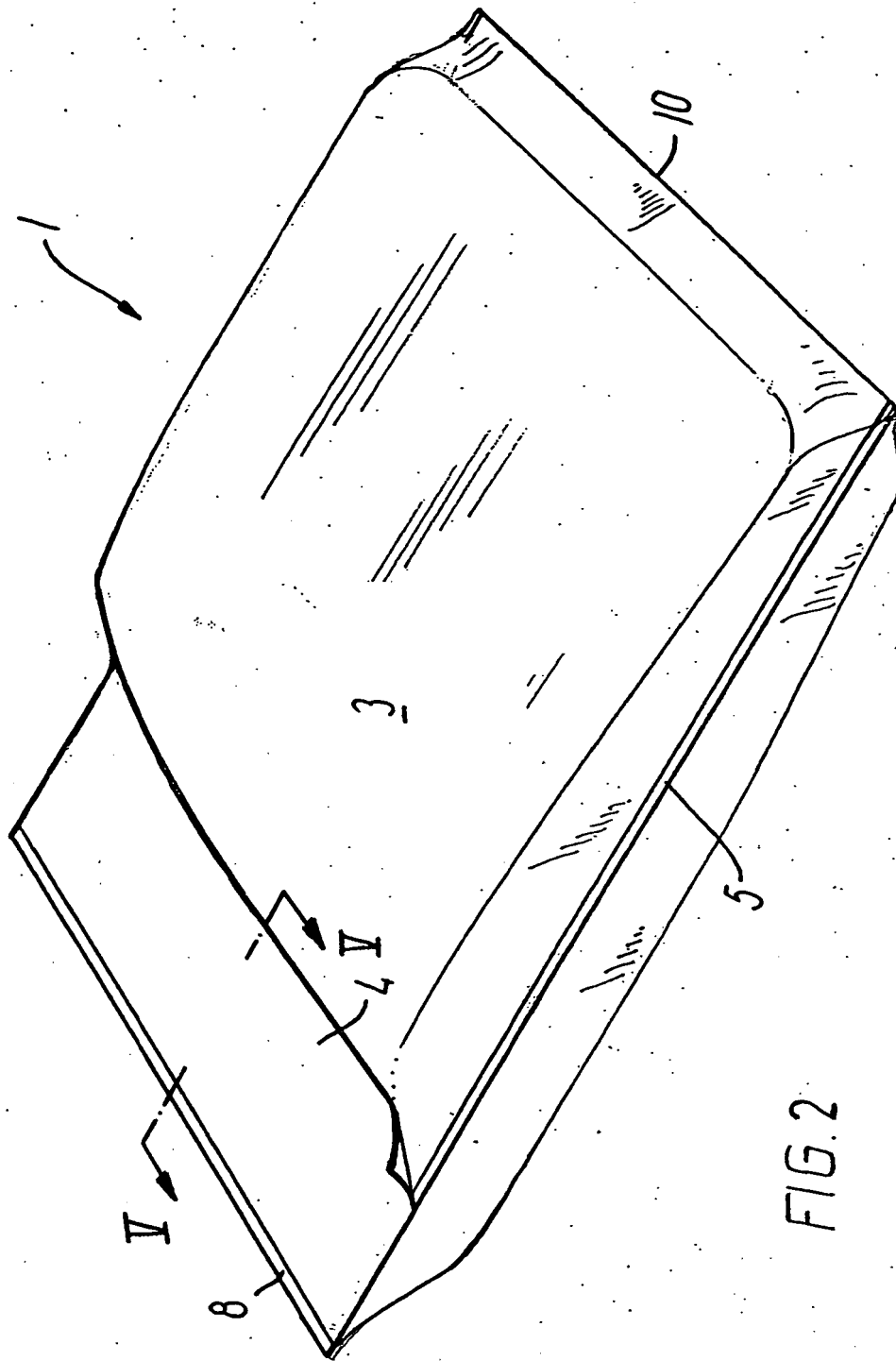
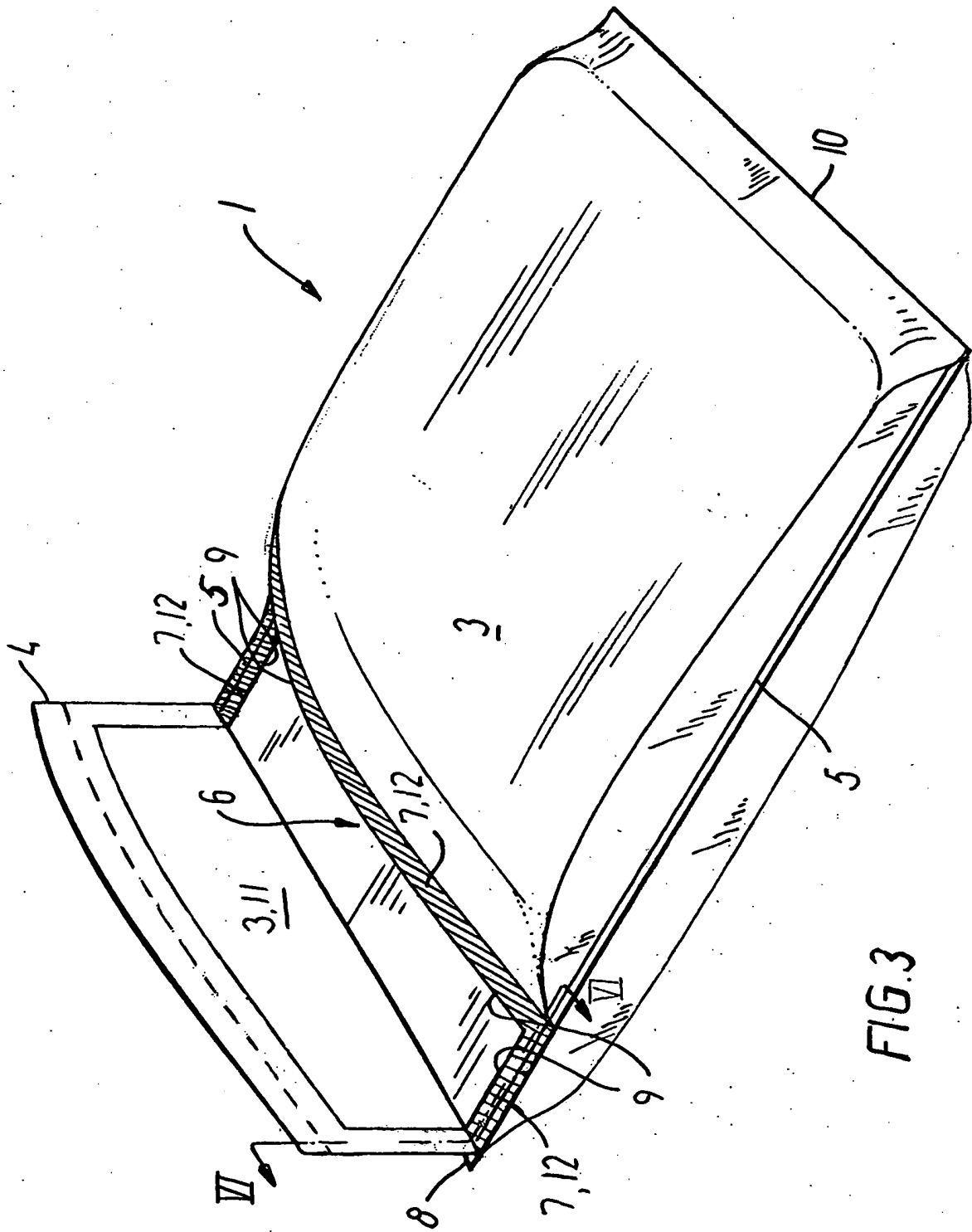


FIG. 1





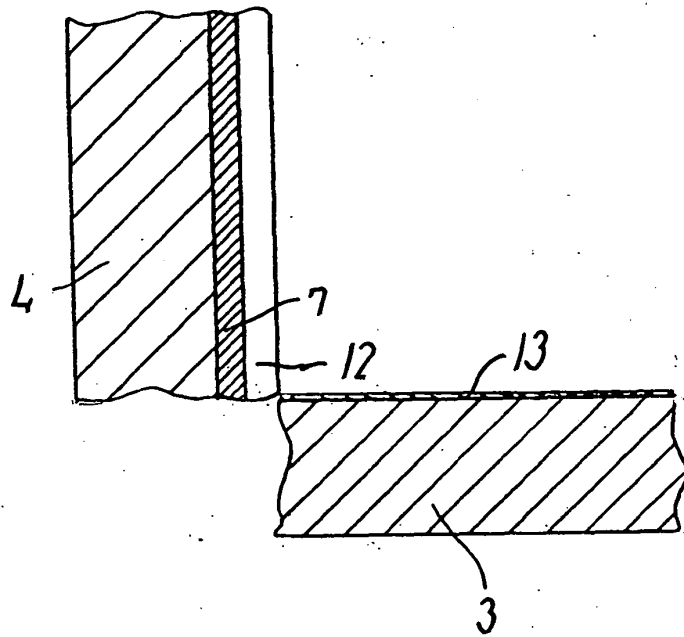


FIG. 4

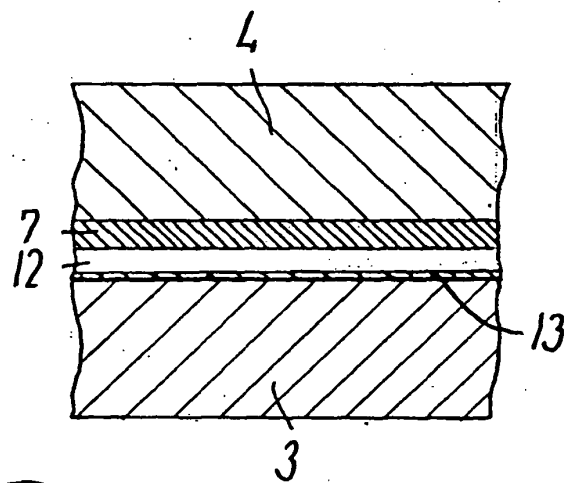


FIG. 5

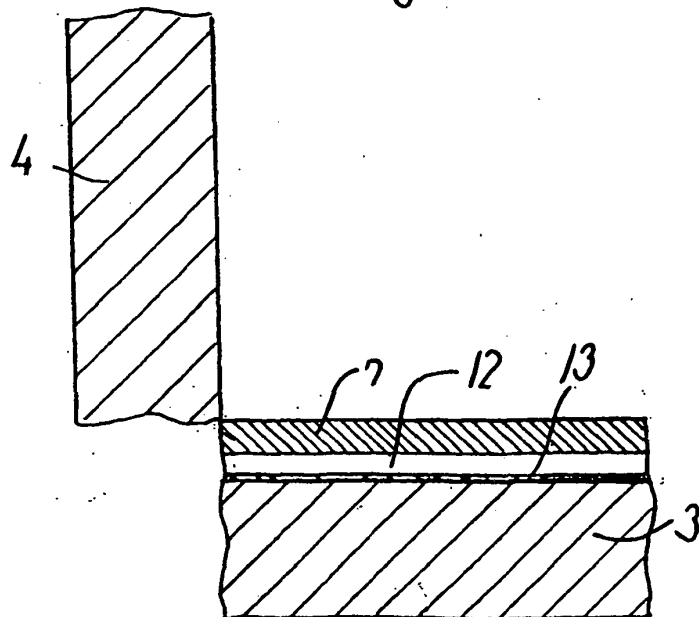


FIG. 6

REFERENCES CITED IN THE DESCRIPTION

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